

PHOTOGRAPHS

Precast Concrete Products That Should be Rejected,
Accepted, or Rejected Due to Unacceptable Repairs



PHYSICAL MEASUREMENTS

Reject Product: Pipe spigot is out of round.



PHYSICAL MEASUREMENTS

Reject Product: Excess material is present in bell end of pipe (overpacking).



PHYSICAL MEASUREMENTS

Reject Product: Excess material is present in bell end of pipe (Overpacking and Feathered edge).



PHYSICAL MEASUREMENTS

Reject Product: Pipe exhibits interior delamination.



CRACKS

Reject Product: Crack passes through wall of pipe.



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CRACKS

Reject Product: Width of surface crack in pipe is 0.01 in. (0.25 mm) or greater and length exceeds 12 in. (0.3 m).



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CRACKS

Reject Product: Crack passes through wall of end section.



HONEYCOMB - Outside

Reject Product: Honeycomb is deeper than $\frac{3}{4}$ the depth of the coarse aggregate and exceeds 5 percent of the surface area of the pipe.



HONEYCOMB - Inside

Reject Product: Pipe with honeycomb on the inside shall be rejected.



SMOOTHNESS

Reject Product: Interior of pipe is not substantially free from surface roughness.



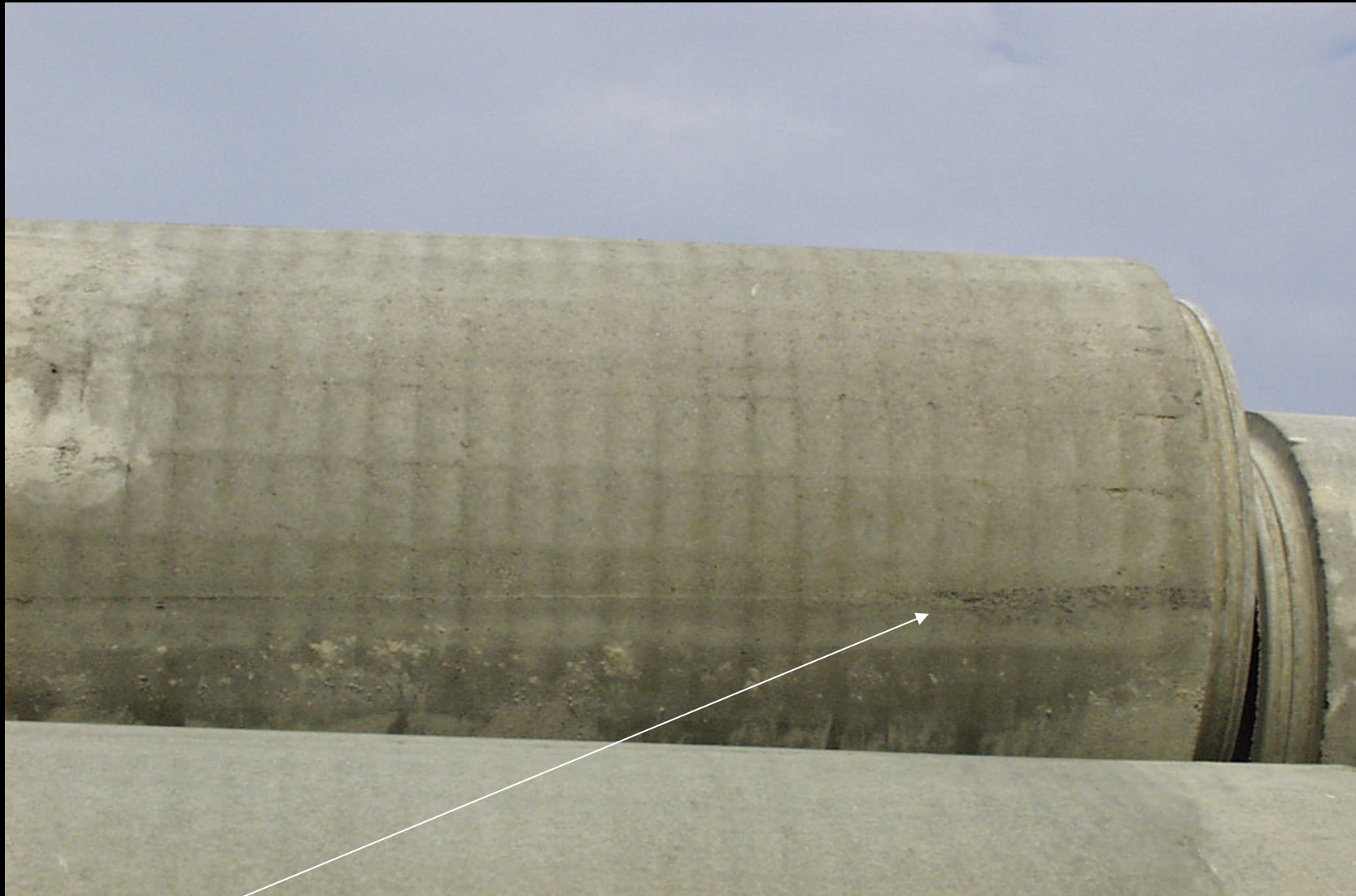
IMPROPER REINFORCEMENT PLACEMENT

Reject Product: Reinforcement is exposed on inside of pipe.



IMPROPER REINFORCEMENT PLACEMENT

Reject Product: Reinforcement is exposed on outside of pipe.



IMPROPER REINFORCEMENT PLACEMENT

Reject Product: Shadowing (ghosting) may indicate insufficient concrete cover over the reinforcement. Further inspection of this pipe determined that the depth of cover does not meet the specification requirements. One method to verify adequate cover is to remove the concrete and expose the reinforcement at one location.



IMPROPER REINFORCEMENT PLACEMENT

Reject Product: Reinforcement is exposed on outside of manhole cone.



PROPER REINFORCEMENT PLACEMENT

Accept Product: The exposed ends of longitudinal steel, stirrups, lift holes, or spacers used to position the reinforcement (cage) during concrete placement is not cause for rejection of this pipe.



CHIPPED OR DAMAGED ENDS

Reject Product: Damage is halfway or more into the pipe joint and has a length of more than 10 percent of the end circumference or perimeter.



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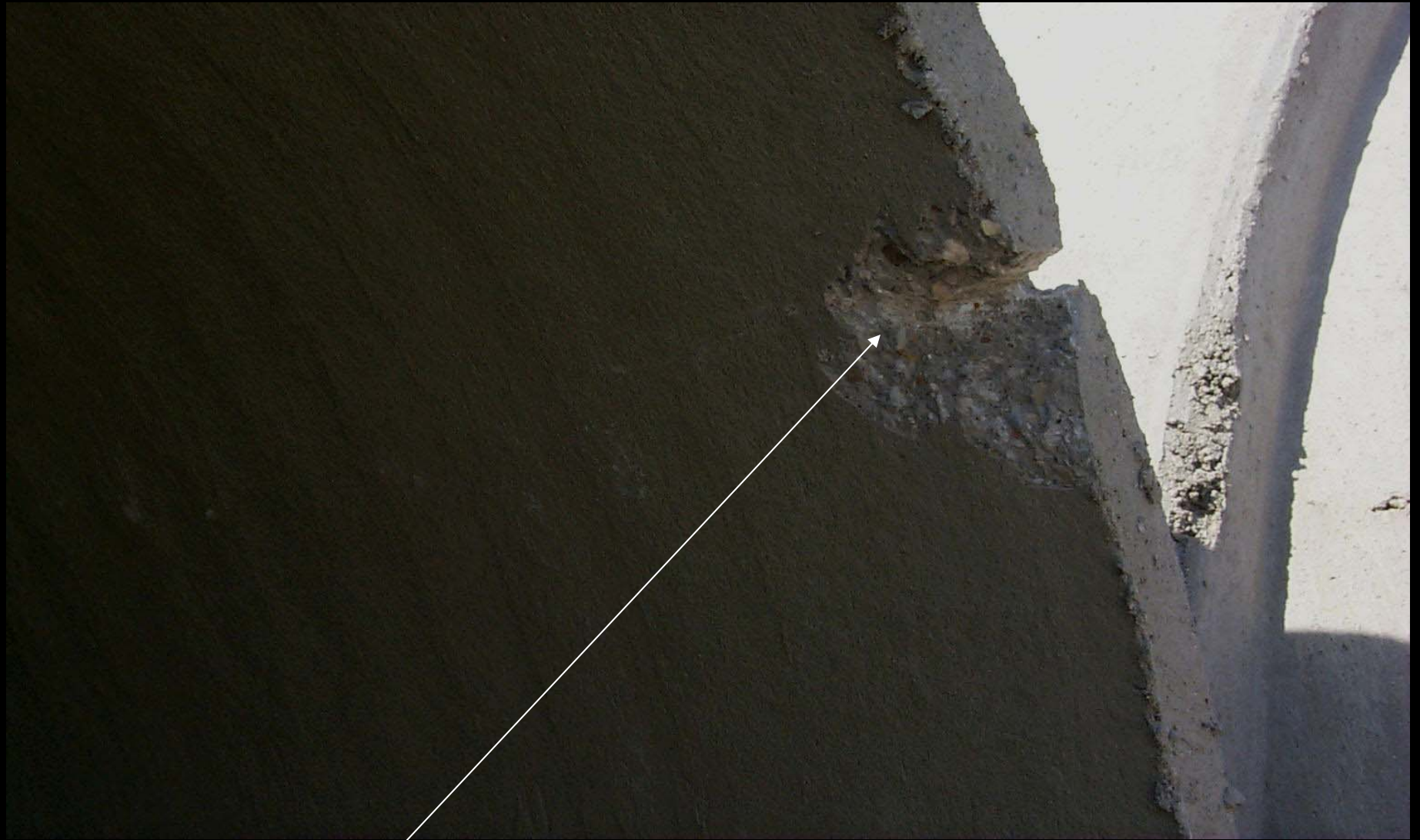
CHIPPED OR DAMAGED ENDS

Product Repairable: Damaged end section may be repaired.



CHIPPED OR DAMAGED ENDS

Product Repairable: Damaged pipe joint may be repaired. The damage is more than halfway into the joint, but the length is less than 10 percent of the end circumference or perimeter.



CHIPPED OR DAMAGED ENDS

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CHIPPED OR DAMAGED ENDS

Acceptable Repair: Pipe joint repair shows good bond and conformance with physical dimensions.



CHIPPED OR DAMAGED ENDS

Unacceptable Repair: Pipe joint repair indicates a poor bond and cracking.



IDENTIFICATION MARKINGS

Example of complete and legible identification markings. Reject product if the identification markings are not legible or are absent.



IDENTIFICATION MARKINGS

Example of complete and legible identification markings. Reject product if the identification markings are not legible or are absent.



Example of unacceptable markings for barrier



Example of exposed Wire - Sufficient To Reject



Example of overpacking - Sufficient To Reject



Example of acceptable Patch



- Reject Product: Crack passes through wall of pipe.



- **Reject Product:** Interior of pipe is not substantially free from surface roughness.